

6 The Poisson distribution – Part 1

—Answers

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Work through these after trying the questions yourself.

6.1 The number of random events in a fixed interval (at a steady average rate).

6.2 λ (the same as the mean).

6.3 $P(X = 2) = e^{-3} \frac{3^2}{2!} = 0.0498 \times 4.5 = 0.224$.

6.4 $3(5) - 1 = 14$.

6.5 $3^2 \times 4 = 36$.

6.6 $P(X = 5) = e^{-4} \frac{4^5}{5!} = 0.0183 \times \frac{1024}{120} = 0.0183 \times 8.53 = 0.156$ (3 s.f.).